BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In re: Union Electric Company's 2011 Utility Resource Filing Pursuant to 4 CSR 240 – Chapter 22	)))	**File No. EO-2011-0271**

COMMENTS OF GRAIN BELT EXPRESS CLEAN LINE LLC ON UNION ELECTRIC COMPANY'S INTEGRATED RESOURCE PLAN

On February 23, 2011, Union Electric Company ("Ameren Missouri") filed its Integrated Resource Plan ("IRP"), a study that outlines the utility's resource acquisition strategy over the next three years and the overall direction of resource procurements for the remainder of the 20-year planning horizon. On March 15, 2011, Grain Belt Express Clean Line LLC ("Clean Line") filed an Application to Intervene in this proceeding, which was granted by the Missouri Public Service Commission on March 28, 2011. Pursuant to 4 CSR 240-22.080, Parties were permitted to submit comments on Ameren Missouri's Integrated Resource Plan within 120 days from Ameren Missouri's IRP filing date. Clean Line respectfully submits these comments.

I. BACKGROUND

As the United States moves to achieve its ambitious renewable energy goals – 29 states and Washington DC have a Renewable Portfolio Standard (RPS) – a dramatic expansion of the transmission grid is needed to incorporate renewable resources. Clean Line hopes to play an instrumental role in accelerating the delivery of renewable energy from remote resource areas to distant load centers and in achieving U.S. environmental policy goals. The need for lines like those that Clean Line is developing will continue to grow as electricity demand increases in the United States and as the demand for clean power sources accelerates. Technology improvements in wind and in transmission make the efficient transportation of wind energy more feasible now than ever before.

Clean Line is an independent developer of high voltage, long-haul transmission lines and is not involved in any way with resource development or generation. Clean Line is developing high voltage direct current (HVDC) transmission lines that will export wind, and potentially solar energy, from some of America's best resources to load centers and customers in regions with less plentiful or less cost effective local renewable energy resources. It is Clean Line's belief that the all-in delivered cost of these high-quality renewable resources, including transmission, is lower than local, less favorable renewable energy sources and in many instances, cheaper than traditional energy sources.

Clean Line has made significant progress on its proposed transmission projects. Clean Line is developing the Grain Belt Express Clean Line, a high voltage direct current transmission line that will be capable of moving up to 3,500 MW of renewable power from new generation projects in western Kansas to Ameren Missouri's service territory, the Midwest Independent Transmission System Operator, and on to states further east.

Clean Line is also developing the Plains & Eastern Clean Line to deliver wind and solar generated electricity, to be produced in, Northwestern Oklahoma, the Texas panhandle, and potentially Kansas, to the Tennessee Valley Authority and other areas of the southeastern United States. The Plains & Eastern Clean Line will consist of two parallel circuit ± 600 kilovolt direct current, overhead transmission lines and is scheduled to deliver up to 7,000 MW of associated power to the TVA network and surrounding areas beginning in 2016.

In the upper Midwest, Clean Line is developing the Rock Island Clean Line, a high voltage direct current transmission line that will be capable of moving up to 3,500 MW of wind-generated electricity from Iowa and South Dakota or Nebraska with load centers near Chicago and the surrounding region. Although wind energy in Iowa, Minnesota, and the Dakotas has

grown impressively in recent years, the construction of new projects will grind to a halt if additional transmission lines are not built soon. The Rock Island Clean Line will allow for continued growth of the wind industry in Iowa and surrounding areas.

In the West, Clean Line is developing the Centennial West Clean Line, a high-voltage direct current transmission line that will gather energy from renewable energy generation projects in eastern New Mexico and surrounding areas and will transmit it to load centers such as southern Nevada, Southern California, Arizona, and other areas in the Southwest. The Project will deliver up to 3,500 megawatts (MW) of associated power to these load centers.

All four of Clean Line's projects will facilitate the reliable delivery of power generated by renewable resources, and the development of these projects will support national efforts to significantly increase renewable electric generation capacity. These projects will meet the needs of generators and utilities for new transmission capacity and will enable the construction of thousands of megawatts of new, cost-effective renewable electric generation capacity. The addition of this generation capacity will create new jobs, stimulate domestic manufacturing, and reduce pollution and water consumption.

II. COMMENTS

1. It is universally known that wind is a variable resource. Regardless of the capacity value ascribed to wind generation – Ameren attributes 8% in its filing – wind primarily provides energy, not capacity. Wind allows for the saving of fuel costs from other resources. For every megawatt hour (MWh) that is produced by a wind turbine, one MWh is not produced by another generator. Therefore, wind offsets fuel consumption and resulting emissions, which reduces the amount of carbon dioxide, sulfur dioxide, nitrogen oxide, and mercury that is released into the atmosphere. In evaluating the purchase of wind, a utility should perform a cost benefit analysis

about whether wind energy is cheaper than other sources rather than dismissing it because it does not provide a large amount of capacity. Resources, such as simple cycle gas peaking plants, that primarily provide capacity are not dismissed because they provide a small amount of energy and typically have lower utilization rates than other generation plants. Likewise, wind should not be excluded from further consideration because it must work in tandem with other resources that have higher capacity values.

The variability of wind should not devalue wind resources. The power system has been designed to handle significant variability in loads, and grid operators have vast experience managing this variability. Variations in wind output are closely related to variations in electric load that utilities constantly manage. Thus the grid is already equipped with the ability to withstand wind's characteristics. A number of studies have demonstrated that a large percentage of wind energy can be integrated for a cost under $5/MWh.[1] Countries such as Germany, Spain, Denmark, and Ireland have all successfully integrated variable renewable resources to supply 10% or more of their electricity demand. ERCOT regularly hit 25% wind energy without disruptions to reliable service.

2. For resource planning purposes and in order to estimate a general capacity factor, Ameren used a generic wind resource by averaging wind potentials from a number of different states, including numbers from states to the east of Missouri, namely Wisconsin, Illinois, and Indiana. In doing so, Ameren averaged numbers from states with the highest wind speeds (8.5 m/s[2]-9.0 m/s) with numbers from states with marginal wind speeds (6.0-6.5 m/s). Because of Ameren's location – three of Missouri's neighboring states are located in the heart of the wind

[1] http://www.nrel.gov/docs/fy07osti/41329.pdf

[2] The term m/s refers to meters per second of speed.

corridor – a more appropriate analysis would evaluate buying wind in the most cost effective way possible, that is, in the best wind resource locations. Using the generic resource numbers, Ameren estimated a capacity factor of 37.5%. If Ameren were to consider better wind resource locations, such as Kansas or other windy states, this capacity factor would be substantially higher.

Further, Ameren has based its calculations on already outdated technology; all of the IRP's capacity factors are based on towers with 80-meter hub heights. GE, Vestas, Siemens, and others have already unveiled towers with 100-meter hub heights. In addition to higher hub heights, newer turbines also have longer blades, more effective controls, and, in some cases, direct drive generators. All of these factors contribute to wind's cost effectiveness and should be considered in the IRP.

3. For resource planning purposes, Ameren utilized a $2,000/kW estimate for wind capital costs. While this figure is in line with 2009 and 2010 capital costs, those costs have declined recently, due in part to the decrease in wind turbine price. While installed capital costs did reach $2000/kw during the market's peak in 2008, they have since declined substantially due to increased US turbine supply and global competition. Evidence of the trend is found in declining PPA prices, which have fallen from about $50/MWh to about $30/MWh in the windiest parts of the county. An illustration of these lower PPA prices can be seen in recently signed long-term power purchase agreements. In 2010, the Baldwin project in North Dakota entered into a 32-year power purchase agreement at $34/MWh, the Ashtabula Wind II project (also in North Dakota) entered into a 29-year power purchase agreement at $38/MWh, and the Minco Wind,

LLC project in Oklahoma entered into a 21-year power purchase agreement at $37.21/MWh.[3] Ameren's analysis should be updated to include more current price information.

Additionally, Ameren's analysis is based on the assumption that the Production Tax Credit is going to lapse in 2012. Since its creation in the mid-90s, the production tax credit has been expanded and extended every time that it has faced expiration. Rather than assume its demise, Clean Line believes that a more appropriate assumption would be for Ameren to assume in its model that the tax credit would be extended, not vice versa. Nuclear also requires subsidies, which were not eliminated in the IRP assumptions. In order to generate the most consistent projections, Ameren should assume the same policy environment.

4. Another factor that should be considered is wind's long-term price stability. Wind offers the certainty of a long-term, stable price because it is not subject to fuel price spikes or environmental regulations on pollutants, water use, etc. Conversely, natural gas prices have been notorious for substantial fluctuations. While gas prices may be low at the present time, we have no assurance that those prices will remain low, particularly with potential environmental regulation on hydraulic fracturing. The United States needs to focus on a long-term outlook, and wind is a perfect resource with which to do that. Many utilities apply a risk premium to generation sources with high fuel input uncertainty. Clean Line suggests this is appropriate for Ameren.

III. CONCLUSION

[3] FERC Electric Quarterly Reports, 2009-2010, http://www.ferc.gov/docs-filing/eqr.asp.

Clean Line believes that the delivered cost of wind is competitive with, and is often lower than, the other energy sources outlined within the IRP. Ameren qualifies wind according to its capacity value when it should have evaluated wind as an energy resource. Additionally, the values attributed to wind fail to take into account the declining cost of wind turbines, which contribute to wind's continued cost effectiveness. In light of recently published price projections for wind energy and its long-term price stability, Clean Line believes that wind should be further considered in Ameren's three-year resource outlook.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a true and correct copy of the above *Comments of Grain Belt Express Clean Line, LLC* was electronically served, hand-delivered or mailed, postage prepaid, this 23rd day of June, 2011 to:

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